

CLAIMS

1. An integral screen for use in a vibrating machine for separating solids from liquid material comprising woven wire cloth of orthogonal warp and weft wires, tensioned and bonded to a support structure defining a rectangular opening across which the cloth extends, wherein the orientation of the cloth is chosen so that the warp wires extend across the width (i.e. shorter dimension) of the rectangular opening and the weft wires extend across the length (i.e. longer dimension) of the rectangular opening.
2. A screen as claimed in claim 1 wherein the rectangular opening in the support structure includes a plurality of similarly dimensioned, similarly orientated and regularly arranged smaller rectangular openings or windows, formed by a lattice of struts criss-crossing the larger opening, and the cloth is bonded to the lattice struts as well as the boundary of the larger opening.
3. A screen as claimed in claim 2 wherein the warp wires are also parallel to the width dimension (i.e. the shorter sides) of the smaller rectangular openings.
4. A screen as claimed in any of claims 1 to 3 wherein the cloth has a so-called rectangular mesh in that it has rectangular openings in the weave, formed by a greater number of warp wires per unit length than there are weft wires per unit length, and in use the greater number of warp wires resist the greater stress which can occur across the width of the central region of the or each opening.
5. A screen as claimed in any of claims 1 to 3 wherein the cloth has a so called- square mesh in that it has generally square openings in the weave, and the warp wires are selected to have a greater cross sectional size than the weft wires, which since they extend perpendicularly relative to the length dimension of the or each opening, are able

in use to resist the greater stress which can occur across the width of the central region of the or each opening.

6. A screen as claimed in claim 5 wherein the warp wires have a cross-sectional area of between 10% and 30% greater than the weft wires.
7. A screen as claimed in claim 6 wherein the warp wires have a cross-sectional area in the range 20% to 25% greater than the weft wires.
8. A screen as claimed in claim 7 wherein the warp wires have a cross-sectional area 22% greater than that of the weft wires.
9. A screen as claimed in any of claims 1 to 8 wherein the wires are of circular cross-section.
10. A screen as claimed in claim 9 wherein the diameter of the larger warp wires is 0.046 mm, and the diameter of the weft wires is 0.036 mm.
11. A method of manufacturing two integral screens side by side in a jig of the type described wherein each screen is constructed in accordance with claim 1 and wherein a length of woven wire cloth is laid across two rectangular frames laid side by side in the jig with longer edges thereof abutting, the cloth is orientated so that the warp wires extend continuously across the two side by side screens and the weft wires extend parallel to the longer edges of the frames, and is bonded to the frames before it is severed along the join between the frames and surplus wire cloth is trimmed away from the edges of the frames.
12. A method as claimed in claim 11 wherein standard 48" wide woven wire cloth is employed and the 48" wide cloth is cut to 66" length and laid over the two side by side frames in the jig, with the warp wires perpendicular to the length dimension of the frames and each of the frames includes a plurality of similarly orientated, similarly

dimensioned smaller rectangular openings or windows, and the warp wires are perpendicular to the longer dimension of each frame and to the longer dimension of each of the smaller openings in the frames.

13. A method of increasing the life of a screen constructed in accordance with claim 1 and made using a jig of the type described, wherein if the cloth has a square mesh and the warp wires have a greater cross section size than the weft wires, the cloth is positioned so that the stronger warp wires extend across the width of each support frame, and if the cloth has a rectangular mesh, the greater number of warp wires per unit length will extend across the width of each support frame, so that in each case the greater wire cross section or greater number of wires per unit length, will resist in use the stresses which are found to occur across the width of the central region of the or each opening in the frame.
14. A method of reducing waste cloth in a method of screen construction as claimed in claim 11 using a jig of the type described wherein 48" wide cloth is cut into 66" lengths from a 48" wide roll, and the 48" x 66" sheets of wire cloth are positioned over pairs of frames and bonded thereto.
15. A hook-strip screen for use in a vibrating machine for separating solids from liquid material comprising a sheet of woven wire cloth having a plurality of hooks along two opposite parallel edges of the wire cloth sheet for attaching the said two edges of the sheet to the machine, which edges are parallel to the weft wires of the weave, so that the warp wires extend between the edges containing the rows of hooks.
16. A hook-strip screen as claimed in claim 15 wherein the cloth has a rectangular mesh weave and there are more warp wires than weft wires per unit length and the greater number of warp wires is available in use to resist any over-tensioning.
17. A hook-strip screen as claimed in claim 15 wherein the cloth has a square mesh weave and the hooks are positioned along the two parallel edges of the cloth between which

the greater cross-section warp wires extend, which are thereby available in use to resist over-tensioning.